CLAIMS

What is Claimed is:

1. A method of determining the position of a wireless mobile terminal comprising:

determining a first timing advance between the mobile terminal and a first base station based on packet-switched communications therebetween;

instructing said mobile terminal to artificially change from said first base station to a second base station, and thereafter determining a second timing advance between said mobile terminal and said second base station;

receiving indications of the signal strengths of signals from at least third and fourth base stations received at said mobile terminal;

determining the location of said mobile terminal based on said first timing advance, said second timing advance, and said signal strengths.

2. The method of claim 1 wherein receiving indications of the signal strengths of signals from at least third and fourth base stations received at said mobile terminal comprises receiving indications of the signal strengths of signals from a plurality of base stations listed on a neighbor list.

3. The method of claim 1 wherein receiving indications of the signal strengths of signals from at least third and fourth base stations received at said mobile terminal received at said mobile terminal comprises receiving RSSI measurements of the signal

strengths of signals from said at least third and fourth base stations received at said mobile terminal.

4. The method of claim 1 wherein determining the location of said mobile terminal based on said first timing advance, said second timing advance, and said signal strengths comprises determining the location of said mobile terminal based on said first timing advance, said second timing advance, and the relative signal strengths associated with said third and fourth base stations.

5. The method of claim 1 wherein determining said first timing advance between the mobile terminal and said first base station based on packet-switched communications therebetween comprises determining said first timing advance between the mobile terminal and said first base station based on GPRS packet-switched communications therebetween.

6. The method of claim 5 wherein instructing said mobile terminal to artificially change from said first base station to said second base station comprises instructing said mobile terminal to artificially change from said first base station to said second base station via a packet cell change order.

7. A method of determining the position of a wireless mobile terminal comprising:

determining a first timing advance between the mobile terminal and a first base station based on packet-switched communications therebetween;

sending a command to said mobile terminal instructing said mobile terminal to:

synchronize to a second base station and transmit one or more access bursts thereto; and,

thereafter, without waiting for an acknowledgement of said access bursts to said second base station, synchronize to a third base station and transmit one or more access bursts thereto;

determining a second timing advance between said mobile terminal and said second base station;

determining a third timing advance between said mobile terminal and said third base station;

determining the location of said mobile terminal based on said first, second, and third timing advances.

8. The method of claim 7 wherein sending said command to said mobile terminal comprises sending a message containing an identifier to be included in said access bursts.

9. The method of claim 8 wherein said message further includes an indication of the number of access bursts the mobile terminal should transmit to said second base station.

10. The method of claim 8 wherein said message further includes one or more frequencies and an indication of the base station identifier to be used for synchronization to said second base station and

11. The method of claim 7 wherein said command further instructs said mobile terminal to automatically return to said first base station after transmitting said one or more access bursts to said third base station.

12. The method of claim 7 further comprising said mobile terminal automatically suspending, in response to receiving said command, packet data operation until after said transmitting said one or more access bursts to said third base station.

13. A method of determining the position of a wireless mobile terminal comprising:

determining a first timing advance between the mobile terminal and a first base station based on packet-switched communications therebetween;

sending a first command, via said first base station, instructing said mobile terminal to artificially change from said first base station to a second base station, and thereafter determining a second timing advance between said mobile terminal and said second base station based on packet-switched communications therebetween;

thereafter sending a second command, via said second base station, instructing said mobile terminal to artificially change from said second base station to a third base station, and thereafter determining a third timing advance between said mobile terminal and said third base station based on packet-switched communications therebetween;

determining the location of said mobile terminal based on said first, second, and third timing advances.

wherein said first and second commands are packet cell change order commands.

14. The method of claim 13 further comprising sending a third command, via said third base station, instructing said mobile terminal to return to said first base station.

15. A method of determining the position of a wireless mobile terminal comprising:

determining a first timing advance between the mobile terminal and a first base station based on packet-switched communications therebetween, said first base station having a first sectorized cell associated therewith;

sending a command to said mobile terminal instructing said mobile terminal to

synchronize to a second base station and transmit one or more access bursts thereto, said second base station;

determining a second timing advance between said mobile terminal and said second base station;

determining the location of said mobile terminal based on said first and second timing advances and a sector configuration of said first sectorized cell.

16. The method of claim 15 wherein said second base station also has a second sectorized cell associated therewith and wherein determining the location of said mobile terminal based on said first and second timing advances and a sector configuration of said first sectorized cell comprises determining the location of said mobile terminal based on said first and second timing advances and a sector configuration of said first and second sectorized cells.

17. The method of claim 15 wherein said command further instructs said mobile terminal to synchronize to said first base station, after said synchronization to said second base station, without waiting for an acknowledgement of said access bursts to said second base station.

18. A wireless communications mobile terminal adapted to receive a location command from a first base station, said location command indicating at least two other base stations to which said mobile terminal is not currently registered, said mobile terminal adapted to respond to said command by synchronizing to a second base station and transmitting one or more access bursts thereto and thereafter, without waiting for an acknowledgement of said access bursts to said second base station, automatically synchronize to a third base station and transmit one or more access bursts thereto.

19. The mobile terminal of claim 18 wherein said location command includes a indication of the number of access bursts that should be sent to said second base station, and wherein said mobile terminal transmits a number of access bursts to said second base station according to said indication.

20. The mobile terminal of claim 18 wherein said mobile terminal is further adapted to automatically resynchronize to said first base station without waiting for an acknowledgement of said access bursts to said third base station.